WHAT IS CLAIMED IS:

1. A card processing system comprising:

a first antenna unit set in a booth provided at a road side of a traffic lane so as to process data in an IC card with respect to use of a toll road for a vehicle passing the toll road through a wireless communication with the IC card;

a second antenna unit set at the road side of the traffic lane outside the booth to process the data through a wireless communication with the IC card; and

a data processor to process the data relative to use of the toll road based on the card data obtained from either one of the first and second antenna units.

2. The card processing system according to claim 1, wherein the second antenna unit has an antenna portion which is close to or touches the IC card for the wireless communication.

3. The card processing system according to claim 1, wherein the second antenna has antenna portions provided at heights corresponding to vehicle classes to be closed or touched IC cards.

4. The card processing system according to claim 1 further comprising:

a vehicle class discriminator to identify a class of a vehicle entering into the traffic lane;

wherein the data processor selects either one of the antenna units in response to the vehicle classes identified by the vehicle class discriminator and processes the data obtained from the selected antenna unit..

5. A card processing system comprising an entrance system to execute an entrance process at an entrance of a toll road for vehicles passing the toll road and an exit system to execute an exit process for vehicles used the toll road, wherein:

the entrance system includes;

an antenna unit set at a roadside of the entrance, the antenna unit having an antenna portion which is close to or touches an IC card for a wireless communication, and

an entrance card processor to write entrance data on the IC card when the antenna portion of the antenna unit reads the data from the IC card through the wireless communication with the IC card and the card data obtained are normal, and

the exit system includes;

a first antenna unit set in a booth provided at a roadside of an exit, the first antenna unit having an antenna portion which is close to or touches the IC card for a wireless communication ;

a second antenna set at the booth, the second antenna having an antenna portion which is close to or touches the IC card for a wireless communication; and

an exit card processor to write a result of a process relative to use of the toll road into the IC card based on preset exit data and

entrance data read from the IC card through the wireless communication with the IC card by the antenna portion of either the first or the second antenna unit.

6. The card processing system according to claim 5, wherein the IC card stores fixed data containing individual data and variable data containing vehicle data, entrance data, balance amount data and using history data, these data are read by the second antenna unit and a result of collected toll data are written into the IC card based on the read fixed data and the variable data.

7. The card processing system according to claim 6 further comprising:

a guide to inform a vehicle driver of a shortage of a balance found in processing the data of the IC card through the second antenna unit, and the vehicle driver of consultation with a toll clerk to deal with the shortage of a balance.

8. The card processing system according to claim 7, wherein the first antenna unit subtracts a necessary amount from balance data contained in the variable data based on the fixed and variable data read from the IC card indicating the shortage of the balance and writes its result into the IC card.

9. The card processing system according to claim 8 further comprising:

a collector to collect a shortage of the toll from other paying media after subtracting through the first antenna unit.

10. The card processing system according to claim 6, wherein the second antenna unit includes:

a transmitter to send the card data including the rightly read fixed data to the first antenna unit when the fixed data are read rightly but the variable data are involved in reading errors.

11. The card processing system according to claim 10 further comprising:

a guide to inform a vehicle driver of an error when the second antenna unit is involved in reading error and the vehicle driver of consultation with a toll clerk to deal with the error.

12. The card processing system according to claim 11, wherein the first antenna unit reads card data from the IC card by the wireless communication when the reading error is found; further comprising:

a checker to check whether the card data read from the IC card through the first antenna unit are consistent with the card data transmitted from the second antenna unit; and

a collector to collect a shortage of a toll from other paying media after subtracting an amount from a balance data contained in the variable data read through the first antenna unit with respect to IC cards, individual data of which are consistent with each other as

a result of consistency check made by the checker.

13. The card processing system according to claim 6 further comprising:

an outside traffic lane processor to process the IC card at the outside of the traffic lane when the entrance data stored in the IC card can not be checked through the second antenna unit.

14. The card processing system according to claim 13 further comprising:

a first transmitter to send processing results of the IC card processed by the outside traffic lane processor to a communication channel;

a second transmitter set at an entrance of the toll road to transmit entrance data to the communication channel; and

a higher rank apparatus to receive processing results from the outside traffic lane processor and the entrance data from the communication channel, collate these data, register the IC card on which a difference is confirmed as an illegal card and distribute a unique number of the illegal card to the entrance system or the exit system of the toll road.

15. The card processing system according to claim 1, wherein the first and second antenna units read and process the card data containing vehicle class data from the IC card and execute the data process of the IC card, further comprising:

a controller to judge whether a vehicle currently in process is a two-wheeled vehicle or other than a two-wheeled vehicle from the vehicle class data read by either the first or second antenna unit and control acceptability of data process for the remaining antenna unit according to the result of the judgment.

16. The card processing system according to claim 1, wherein the first antenna unit reads and processes the card data containing vehicle class data from the IC card, further comprising:

a passing ticket processor set in the booth to process a passing ticket by operation of a toll clerk;

a judging unit to judge whether a succeeding vehicle entering into the traffic lane during the passing ticket processing by the passing ticket processor or during the card data processing by the first antenna unit is a two wheeled vehicle or other class vehicle; and

a controller to allow the second antenna unit to process the IC card data through the wireless communication with the IC card when the succeeding vehicle is a two wheeled vehicle as a result of the judgment by the judging unit.

17. The card processing system according to claim 5, wherein the exit system further includes:

a vehicle start controller to allow a vehicle to pass where either the first or second antenna unit has processed IC card data of the vehicle and otherwise blocks a vehicle; and

a controller to control the vehicle start controller to let a two

wheeled vehicle first and then a succeeding vehicle leave after IC card data thereof have been processed where the succeeding vehicle coming into the traffic lane is other than when either the first or the second antenna unit processes the IC card data of the two wheeled vehicle.

18. The card processing system according to claim 5, wherein the exit system furtherincludes:

a vehicle start controller to allow a vehicle to pass when either the first or second antenna unit has processed IC card data thereof but otherwise to block a vehicle; and

a controller to control a timing of the vehicle start controller to let a vehicle pass according to a class of vehicles on which IC card data thereof have been processed.

19. A card processing method to execute an entrance process at an entrance of a toll road for vehicles passing the toll road and an exit process at an exit of the toll road, comprising:

reading data from an IC card through a wireless communication by an antenna portion of an antenna unit set at the entrance to which the IC card is brought close or touched and writing an entrance data into the IC card when the card data is normal; and

reading the card data from the IC card through a wireless communication by one of exit antenna units set inside and outside of a booth at the exit and writing a result of processed data relative to use of the toll road on the IC card based on the entrance data and

preset exit data.

20. The card processing method according to claim 19, wherein the IC card stores fixed data containing individual data and variable data containing vehicle data, entrance data, balance amount data and using history data, these data are read by one of the exit antenna units and collected toll for using the toll road is written into the IC card based on the read fixed data and the variable data.

21. The card processing method according to claim 20 further comprising:

informing a vehicle driver of a shortage of balance found in processing data of the IC card by one of the exit antenna unit and the driver of consultation with a toll clerk to deal with the shortage of balance.

22. The card processing method according to claim 21, wherein the antenna unit set in the booth reads the fixed and the variable data through the wireless communication with the IC card indicating the shortage of balance and subtracts an amount that can be subtracted from the balance data contained in the variable data and write a subtracted result onto the IC card.

23. The card processing method according to claim 22 further comprising:

collecting a remaining shortage of balance after subtracting an

amount that can be subtracted by the antenna unit in the booth from other paying media.

24. The card processing method according to claim 20 further comprising:

transmitting the card data containing the correctly read fixed data and variable data when a shortage of balance is found or when a reading error occurs in such a way that fixed data are read correctly but variable data are not read correctly;

informing a vehicle driver of the shortage of balance or the reading error in processing the IC card data by the antenna unit outside the booth and the vehicle driver of consultation with a toll clerk to deal with the shortage of balance or the reading error

reading the fixed data and the variable data from the IC card by the antenna unit set in the booth through the wireless communication with the IC card indicating the reading error or the shortage of balance;

checking consistency between the fixed data read from the IC card by the antenna unit in the booth and the fixed data contained in the card data transmitted from the antenna unit outside the booth; and

collecting a shortage amount from other paying media by subtracting an amount that can be subtracted from balance data contained in the variable data read by the antenna unit in the booth.

25. A card processing system comprising:

a vehicle class discriminator set at a traffic lane to process data relative to use of a toll road for a vehicle passing the toll road to identify a vehicle's class;

plural passing ticket issuers set in a vertical direction to a road side of the traffic lane to issue passing tickets from a height out of plural heights;

plural antenna portions set at positions close to the passing ticket issuers to process data of an IC card through a wireless communication with the IC card; and

a controller to let the passing ticket issuer at a height corresponding to a vehicle class identified by the vehicle class discriminator issue a passing ticket and to return the ticket issued from the passing ticket issuer when the data of the IC card is processed by one of the plural antenna units.

26. The card processing system according to claim 25, wherein the controller controls the passing ticket issuer at a height corresponding to a vehicle class identified by the vehicle class discriminator to issue a passing ticket, evacuates the ticket issued from the passing ticket issuer for a time when the data of the IC card is processed by one of the plural antenna units , returns the passing ticket evacuated for a time when the data of the IC card are normally processed or when the antenna unit processing the data of the IC card is not a position close to the passing ticket issuer, and controls the passing ticket issuer close to the antenna unit

processing the data of the IC card to issue a passing ticket when an error is found in the data process of the IC card.

27. The card processing system according to claim 25, wherein the passing ticket issuer includes:

first passing ticket issuers set in vertical positions at one of the roadsides of the traffic lane to issue a passing ticket from one of the vertical positions; and

a second passing ticket issuer set at the other roadside of the traffic lane at a prescribed height position to issue a passing ticket therefrom that position,

wherein the first antenna portions correspond to the positions close to the first passing ticket issuers to process the data of the IC card through the wireless communication with the IC card,

the second antenna portion corresponds to the position close to the second passing ticket issuer to process the data of the IC card through the wireless communication with the IC card, and

the controller controls the first passing ticket issuer from a position at a height according to the vehicle class identified by the vehicle class discriminator and when the data process of the IC card is executed by the second antenna unit, returns a passing ticket issued from the first passing ticket issuer and when an error was generated in the data process of the IC card, issues a passing ticket from the second passing ticket issuer.

28. A card processing system comprising:

a leaving vehicle detector to detect a vehicle leaving a traffic lane to process data relative to the use for a vehicle passing a toll road;

antenna units set in a booth and/or at a road outside the both in the traffic lane to read card data from an IC card through a wireless communication with the IC card, to judge the card data whether the data are normal or not and to process the card data when the card data are normal;

an input unit set in the booth to input a vehicle class data processed by at least one of the antenna unit and a class of a vehicle to be processed;

means for urging whether the vehicle data input by the input unit can be confirmed as the data of a vehicle to be processed after a vehicle is detected by the card data obtained when reading the card data from the IC card by the antenna unit and the leaving vehicle detector; and

a controller to control the antenna unit to write a result of the card processed by the confirmed data of a vehicle to be processed when the confirmation is input by the input unit.

29. A card processing method comprising:

judging a class of a vehicle entering into a traffic lane of a toll road; and

issuing a passing ticket from a passing ticket issuer at a position corresponding to a vehicle class out of plural passing ticket issuers installed in a vertical direction to a roadside of the traffic

lane.

30. The card processing method according to claim 29 further comprising:

returning the passing ticket issued from the passing ticket issuer when the data of an IC card are processed by one of antenna portions set at the positions close to the passing ticket issuers.

31. The card processing method according to claim 29 further comprising:

evacuating the passing ticket issued from the passing ticket issue for a time when the data of the IC card are processed by one of plural antenna portions set at the positions close to the passing ticket issuers;

completely returning the passing ticker evacuated for a time when the IC card data are processed normally or the antenna unit processing the IC card data is not at a position close to the passing ticket issuer that issued the passing ticket; and

issuing a passing ticket from the applicable passing ticket issuer at the position close to the applicable antenna unit that processed the IC card data when an error is found in the data process of the IC card.

32. A card processing method comprising:

processing data of an IC card by an antenna portion set at a traffic lane through a wireless communication with the IC card to

collect a toll for a vehicle passed a toll road; and

subtracting the toll from balance data contained in entrance data out of the card data of IC cards when card data of the IC cards are obtained from data processed by the antenna portion.

33. The card processing method according to claim 32 further comprising:

subtracting a shortage in order of less balance amount from balance data of the remaining IC card when the shortage is found when subtracting the toll from balance data of IC cards containing the entrance data.

34. A card processing method for executing an entrance process at an entrance for a vehicle passing a toll road and an exit process at an exit, comprising:

identifying a vehicle entering into the entrance of the toll road;

writing entrance data containing a vehicle data specified at the entrance into an IC card when an entrance antenna portion provided at the entrance of the toll road reads the card data from the IC card through a wireless communication with the IC card and the card data are normal;

reading entrance data from the IC card by an exit antenna portion provided at the exit through a wireless communication with the IC card;

identifying a vehicle leaving the toll road through the exit;

judging whether the IC card used at the entrance and the exit

are the same IC card in the process of the applicable vehicle based on the vehicle data contained in the entrance data read by the exit antenna portion and the data of the vehicle identified at the exit;

reporting the doubt of illegality when the IC card used at the entrance and the exit are judged different in the process of the applicable vehicle.

35. A card processing method comprising:

executing the data process of an IC card by antenna units set in a booth and/or at a roadside of a traffic lane for processing data relative to the use of a toll road by vehicles after reading card data from the IC card through a wireless communication and confirming the data to be processed;

detecting a vehicle leaving from the traffic lane after finishing to process the data of the IC card;

designating a class of a new vehicle to be processed by the antenna unit after detecting a vehicle leading from the traffic lane;

urging to determine whether the vehicle data designated as a new vehicle class and card data actually read by the antenna unit from the IC card of the new vehicle as the data to be processed;

inputting the defined new vehicle class; and

writing result data processed by the antenna unit according to the defined input data in the IC card.

36. A card processing system comprising:

a vehicle class discriminator equipped in a traffic lane to

identify a class of a vehicle passing through a toll road;

antenna portions set at vertically different height positions on a road side of the traffic lane to carry out radio communications with an IC cards for processing data stored in the IC cards; and

a control unit to drive one of the antennas portions in response to a vehicle class identified by the vehicle class discriminator so as to process the data of the IC cards.

37. The card processing system according to Claim 3, further comprising:

a vehicle class discriminator to identify a class of a vehicle entering the traffic lane, wherein the data processing unit selects one of the antenna portions in response to a vehicle class identified by the vehicle class discriminator and processes card data with respect to utilization of the toll road obtained from the selected antenna portion.